REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	November 8, 1999	Technical Report

4. TITLE AND SUBTITLE

Synthesis of Novel 8-Hydroxyquinoline-Containing Diaz-18-Crown-6 Ligands and Analogues.

5. FUNDING NUMBERS

N00014-98-1-0485
98PR05020-00

6. AUTHOR(S)

Ning Su, Jerald S. Bradshaw, Paul B. Savage, Guoping Xue, Krzysztof E. Krakowiak, and Reed M. Izatt

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Department of Chemistry and Biochemistry
Brigham Young University
Provo, UT 84602

8. PERFORMING ORGANIZATION REPORT NUMBER

Technical Report No 14

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Dr. Kelvin Higa (Program Director)
Office of Naval Research
800 No. Quincy Street
Arlington, VA 22217-5000

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT

Approved for public release; distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

Ten new analogues of 5-chloro-8-hydroxyquinolin-7-ylmethyl- and -5-chloro-8-hydroxyquinolin-2-ylmethyl-substituted diaza-18-crown-6 ethers **1** and **2,** respectively (Figure 1) were synthesized *via* a one-pot or stepwise Mannich reaction, reductive amination, or by reacting diaza-18-crown-6 with 5,7-dichloro-2-iodomethyl-8-quinolinol in the presence of *N,N*-diisopropylethylamine (Schemes 1 and 2). The Mannich reaction of *N,N'*-bis(methozymethyl)diaza-18-crown-6 with 4-chloro-2-(1*H*-pyrazol-3-yl)phenol gave the -NCH_2N-linked bis(3-(5-chloro-2-hydroxy)pyrazol-1-ylmethyl)-substituted diazacrown ether (**14**) in a 98% yield. The reaction of bis-*N,N'*-methoxymethyldiaza-18-crown-6 with 2.2 equivalents of 10-hydroxybenzoquinoline gave only the monosubstituted diazacrown ether ligand (**8**). The yields of the new products are given in the schemes.

14. SUBJECT TERMS			15. NUMBER OF PAGES
			16. PRICE CODE NA
17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

OFFICE OF NAVAL RESEARCH

Grant N00014-98-1-0485

Technical Report No. 14

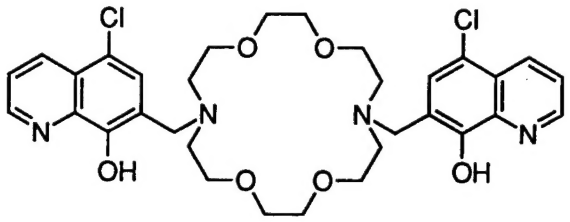
Synthesis of Novel 8-Hydroxyquinoline-Containing Diaz-18-Crown-6 Ligands and Analogues

by

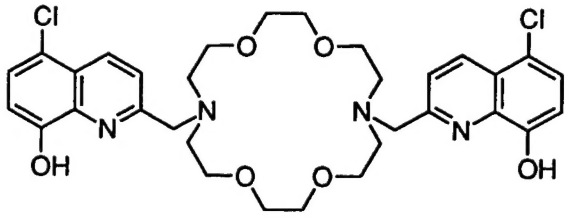
Ning Su, Jerald S. Bradshaw, Paul B. Savage, Guoping Xue,
Krzysztof E. Krakowiak, and Reed M. Izatt

Department of Chemistry and Biochemistry,
Brigham Young University, Provo, UT 84602

November 3, 1999

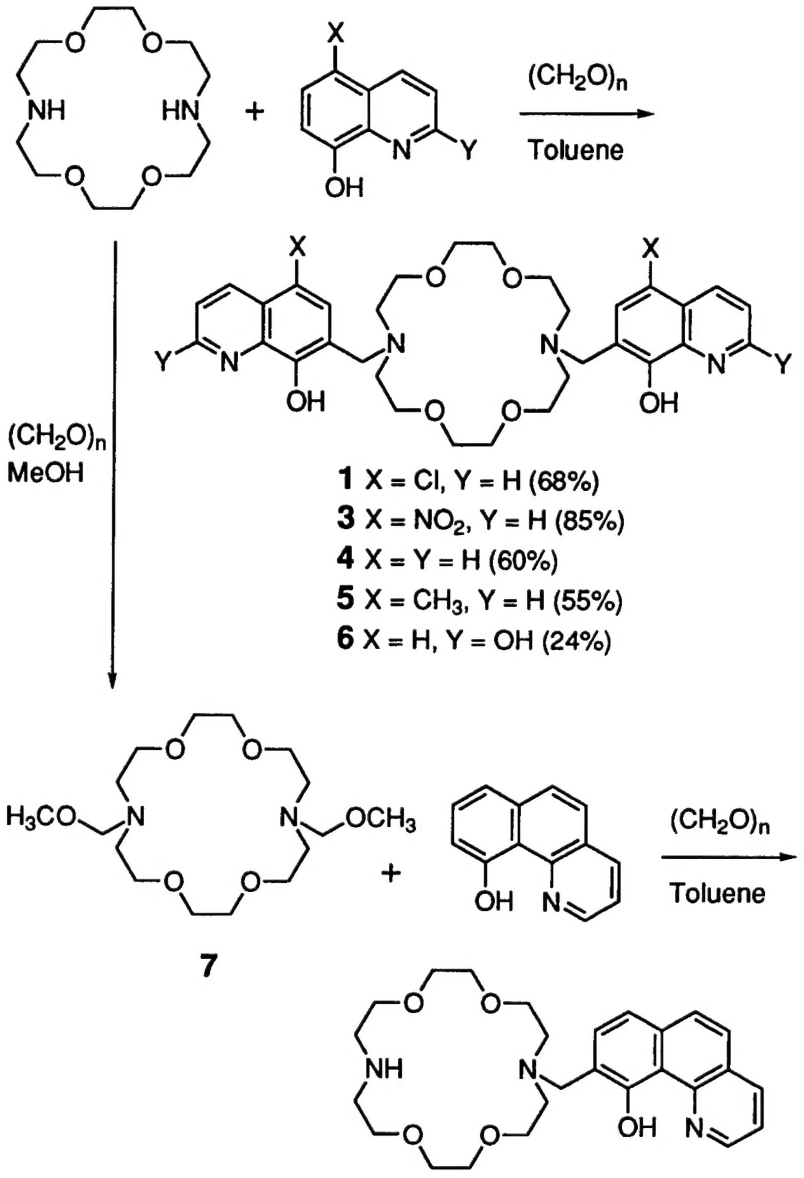


1

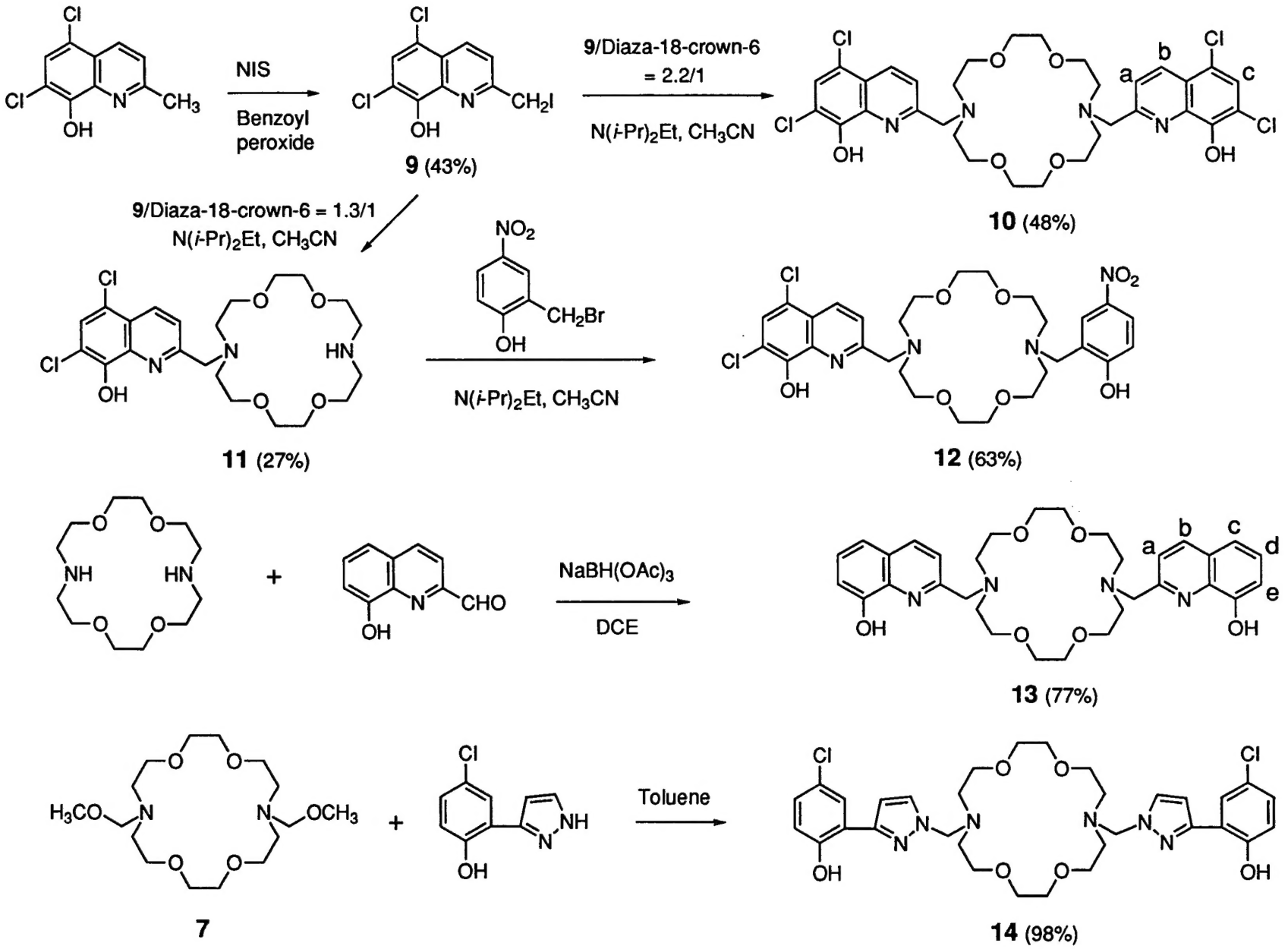


2

Figure 1. 5-Chloro-8-hydroxyquinoline (CHQ)-substituted Diaza-18-crown-6 Ligands **1** and **2**



Scheme 1. Syntheses of CHQ-7-ylmethyl-substituted Analogues of **1** and Related Ligand **8**



Scheme 2. Efficient Syntheses of Analogues of CHQ-2-ylmethyl-substituted **2** and Related Ligand **14**